

OCT 19 2004

EXHIBIT B

PATENT
Docket No. 56842US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): MITTLESTADT et al.) Group Art Unit: 3743
Serial No.: 09/888,943)
Confirmation No.: 9282) Examiner: Nihir B. Patel
Filed: 25 June 2001)
For: RESPIRATOR VALVE)

AMENDMENT AND RESPONSE

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In connection with the Request for Continued Examination being filed herewith, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on the page entitled "Amendments to the Claims."

Remarks begin on the page entitled "Remarks."

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: RESPIRATOR VALVE

Page 2 of 10

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1-14. (Canceled)

15. (Currently Amended) A respirator having a unidirectional valve, comprising;
a face mask having at least one opening for receiving a unidirectional valve; and
a unidirectional valve comprising:
a valve body including a frame, a valve opening through the frame, and a valve seat extending from the frame and at least partially surrounding the valve opening; and
a valve flap having a first portion attached to the frame and an adjacent second portion free to move from a first position where the second portion is in contact with at least a part of the valve seat to a second position where at least part of the second portion is spaced from the valve seat, wherein the valve flap has a contour shape, and further wherein at least a portion of the contour shape of the valve flap is at least partially flattened when the valve flap contacts the valve seat;
wherein the valve flap further comprises a top surface, a bottom surface, and at least one support element extending from the top surface of the valve flap, wherein the at least one support element provides the contour shape of the valve flap.

16. (Original) The respirator of claim 15, wherein the face mask is formed of a filtering material.

17. (Original) The respirator of claim 15, wherein the unidirectional valve is an exhalation valve.

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: RESPIRATOR VALVE

Page 3 of 10

18. (Original) The respirator of claim 15, wherein the unidirectional valve is an inhalation valve.
19. (New) The respirator of claim 15, wherein the valve flap comprises a plurality of support elements, wherein each of the plurality of support elements is spaced from each adjacent support element.
20. (New) The respirator of claim 15, wherein the valve flap further comprises a first side spaced from a second side, and wherein the valve contour varies between the first and second sides.
21. (New) The respirator of claim 19, wherein the valve flap has a compound curvature.
22. (New) The respirator of claim 15, wherein the valve flap further comprises a first end spaced from a second end, and wherein the valve contour varies between the first and second ends.
23. (New) The respirator of claim 15, wherein the valve seat is generally planar and the valve flap has a curvature that causes a bias of the valve flap toward the valve seat to provide a seal between the valve flap and the valve seat.
24. (New) The respirator of claim 23, wherein at least a portion of the curvature of the valve flap is at least partially flattened when the valve flap contacts the valve seat.
25. (New) The respirator of claim 15, wherein the bias of the valve flap toward the valve seat is sufficient to provide a seal between the valve flap and the valve seat in any orientation of the unidirectional valve.

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: RESPIRATOR VALVE

Page 4 of 10

26. (New) The respirator of claim 15, wherein the frame of the valve body includes an angled portion adjacent the valve seat.
27. (New) The respirator of claim 15, wherein the valve flap is removably attached to the valve body.
28. (New) A respirator having a unidirectional valve, comprising:
 - a face mask having at least one opening for receiving a unidirectional valve; and
 - a unidirectional valve comprising:
 - a valve body comprising a valve opening; and
 - a valve flap having a first portion attached to the valve body and an adjacent second portion that seals the valve opening, wherein the valve flap has a curvature from the first end to the second end when the valve flap is not attached to the valve body, and further wherein at least a portion of the curvature of the valve flap is at least partially flattened when the valve flap seals the valve opening.
29. (New) The respirator of claim 28, wherein the valve opening is generally planar, and wherein the valve flap curvature biases the valve flap toward the valve opening when the valve flap is attached to the valve body to seal the valve opening.
30. (New) The respirator of claim 28, wherein the valve flap curvature biases the valve flap toward the valve opening to seal the valve opening, and wherein the bias of the valve flap toward the valve opening is sufficient to seal between the valve opening in any orientation of the unidirectional valve.

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: **RESPIRATOR VALVE**

Page 5 of 10

31. (New) The respirator of claim 28, wherein the curvature in the valve flap comprises a constant curvature from the first end to the second end.
32. (New) The respirator of claim 28, wherein the curvature in the valve flap varies from the first end to the second end.
33. (New) The respirator of claim 28, wherein the face mask is formed of a filtering material.
34. (New) The respirator of claim 28, wherein the unidirectional valve is an exhalation valve.
35. (New) The respirator of claim 28, wherein the unidirectional valve is an inhalation valve.
36. (New) The respirator of claim 28, wherein the valve flap further comprises a top surface, a bottom surface, at least one support element extending from the top surface of the valve flap, and wherein the at least one support element provides the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.
37. (New) The respirator of claim 28, wherein the valve flap further comprises a top surface, a bottom surface, wherein the valve flap further comprises a plurality of support elements extending from the top surface, wherein each of the plurality of support elements is spaced from each adjacent support element, and wherein the plurality of support elements provide the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: RESPIRATOR VALVE

Page 6 of 10

38. (New) A respirator comprising:
a face mask comprising an opening formed therethrough; and
a unidirectional valve located over the opening in the face mask, the unidirectional valve comprising a valve flap attached to the face mask over the opening, the valve flap comprising a curvature from a first end to a second end when the valve flap is not attached to the face mask, wherein the curvature of the valve flap is at least partially flattened when the valve flap seals the opening in the face mask.
39. (New) The respirator of claim 38, wherein the at least partially flattened curvature of the valve flap creates a bias that is substantial enough to keep the valve flap sealed over the opening in all orientations.
40. (New) The respirator of claim 38, wherein the curvature of the valve flap comprises a constant curvature.
41. (New) The respirator of claim 38, wherein the curvature of the valve flap varies from the first end to the second end.
42. (New) The respirator of claim 38, wherein the opening is generally planar such that the curvature of the valve flap attached to the face mask over the opening is flattened when the valve flap seals the opening in the face mask.
43. (New) The respirator of claim 38, wherein the face mask is formed of a filtering material.
44. (New) The respirator of claim 38, wherein the unidirectional valve is an exhalation valve.
45. (New) The respirator of claim 38, wherein the unidirectional valve is an inhalation valve.

COPY

Amendment and Response

Serial No.: 09/888,943

Confirmation No.: 9282

Filed: 25 June 2001

For: RESPIRATOR VALVE

Page 7 of 10

46. (New) The respirator of claim 38, wherein the valve flap further comprises a top surface, a bottom surface, and at least one support element extending from the top surface of the valve flap, wherein the at least one support element provides the curvature in the valve flap that is at least partially flattened when the valve flap seals the opening.

47. (New) The respirator of claim 38, wherein the valve flap further comprises a top surface, a bottom surface, wherein the valve flap further comprises a plurality of support elements extending from the top surface, wherein each of the plurality of support elements is spaced from each adjacent support element, and wherein the plurality of support elements provide the curvature in the valve flap that is at least partially flattened when the valve flap seals the valve opening.

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: RESPIRATOR VALVE

Page 8 of 10

Remarks

The Final Office Action mailed June 29, 2004 has been received and reviewed. Applicants are filing herewith a Request for Continued Examination (RCE) and, in this paper, canceling claims 1-14, amending claim 15, and presenting new claims 19-47. Upon entry of this paper, claims 15-47 will be pending. Reconsideration and withdrawal of the rejections set forth in the Final Office Action are respectfully requested for the reasons set forth below.

Office Action from Co-Pending Application

Applicants bring the attention of the Examiner to the Office Action received in connection with a co-pending application (U.S. Application No. 09/888,732) in which various claims were rejected under obviousness-type double patenting over claims 1-18 in the present application. A copy of that Office Action (dated 20 August 2004) is attached as Exhibit A.

Allowable Subject Matter

Applicants note that claims 6 and 7 were indicated as allowable if rewritten in independent form. Before cancellation, claim 6 depended from claim 5 which, in turn, depended from claim 1. Claim 7 depended from claim 6.

In place of incorporating claim 6 and its intervening claim 5 into independent claim 1, Applicants have incorporated the recitations of canceled claims 5 and 6 into claim 15 which was directed to a respirator including a unidirectional valve. The unidirectional valve recited in claim 15 included all of the recitations of canceled independent claim 1.

As a result, Applicants respectfully submit that amended claim 15 includes the subject matter indicated as allowable in the Final Office Action.

New dependent claims 19-27, all of which depend from claim 15, are presented to provide more comprehensive protection for Applicants' invention. These claims largely parallel canceled claims 2-4, 7-11, and 14.

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: RESPIRATOR VALVE

Page 9 of 10

In view of the above, Applicants respectfully submit that claims 15-27 are allowable as presented and notification to that effect is requested.

New Claims 28-47

New claims 28-47 are also presented to provide more comprehensive protection of Applicants' invention. Support for new claims 28-47 can be found throughout the application as filed. Many of the claims recite the features presented in the original claims. With respect to the valve flap curvature recitations found in independent claim 28 (and its dependent claims 29-32) and independent claim 38 (and its dependent claims 39-42), support can be found at, for example, page 6, lines 3-23; page 11, lines 1-15, and Figures 3-4. With respect to claims 36, 37, 46, and 47, support can be found at, e.g., page 8, lines 1-25 and Figure 5a. Entry and consideration of these new claims are respectfully requested.

COPY

Amendment and Response
Serial No.: 09/888,943
Confirmation No.: 9282
Filed: 25 June 2001
For: RESPIRATOR VALVE

Page 10 of 10

Summary

It is respectfully submitted that the pending claims 15-47 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted for
MITTLESTADT et al.

By
Mueting, Raasch & Gebhardt, P.A.
P.O. Box 581415
Minneapolis, MN 55458-1415
Phone: (612) 305-1220
Facsimile: (612) 305-1228

19 OCTOBER 2004
Date

By: KW Raasch
Kevin W. Raasch
Reg. No. 35,651
Direct Dial (612)305-1218

CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that the Transmittal Letter and the paper(s), as described hereinabove, are being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 19th day of October, 2004, at 12:22 p.m. (Central Time).

By: Rachel Gagliardi-Gibson Name: Rachel Gagliardi-Gibson

COPY